CHAPTER 4

Issue Areas & Key Recommendations

The issues, potential constraints, and impediments regarding water recycling were grouped by the Task Force into six issue areas. The six workgroups investigating the issues within each area brought recommendations to the Task Force for further deliberation and revision. Within the issue areas, 26 separate issues were identified, 13 of which were deemed to be of highest priority. The Task Force adopted recommendations for all 26 issues, in some cases adopting more than one recommendation for an issue. The six issue areas and the scope of problems included within them are described in this chapter. Also, the highest priority issues and their key recommendations are presented here. In the following chapter the remaining issues and associated recommendations are presented. The six issue areas are as follows:

1. Funding for water recycling,
2. Public dialogue / Public outreach,
3. Plumbing code / Cross-connection control,
4. Regulations and permitting,
5. Economics of water recycling,
6. Science and health / Indirect potable reuse.

At the outset the Task Force emphasizes that while it has investigated ways to promote and increase the use of recycled water, the recommendations presented in this report are not intended to compromise in any way the health and safety of the public. California has a strong record of safe use of recycled water. It is only by continuing this foundation can we maintain public confidence and support and move forward.

The recommendations are given unique numbers for reference, for example, 2.1.3. The first number relates to the issue area, the second to the issue, and the third to the recommendation itself.

1. Funding for Water Recycling

Various State and federal agencies within California administer funding programs to provide financial assistance for public water recycling projects. Typically, local agencies apply for funding for such projects from programs administered by the SWRCB, the DWR, and the USBR. The SWRCB and DWR funding programs operate within the State CALFED funding umbrella.

Each State and federal funding program has a different application process and no requirements exist for the agencies to coordinate their funding efforts. Having such variation in funding is beneficial if it results in more funding for water recycling, thereby serving the different water recycling projects statewide. However, the varying processes can be cumbersome to local applicants seeking funding from multiple sources. Greater water recycling benefits can be achieved with coordination among agencies that serve as funding sources for water recycling research, studies, and projects.

1.1. FUNDING FOR WATER RECYCLING PROJECTS

Issue

The current level of allocated funding for water recycling projects falls short of fulfilling the water recycling potential described in Chapter 2. A total of about $11 billion for capital costs will be needed by 2030 to add an additional 1.5 million acre-feet per year of recycled water capacity in California.

Recommendation 1.1.1.

State funding for reuse/recycling should be increased beyond Proposition 50 and other current sources. Funding for construction of recycled water projects should be included in future water bonds. Under the existing cost share, the State needs to include in new bonds on the order of $300 million annually for grants and low interest loans to achieve the 1.5 million acre feet of additional recycling by the year 2030.

Approach and Implementation:

A bond issue should be passed by the Legislature to allocate additional funding for water recycling projects. Funds for planning, design, and construction of projects should be administered by the SWRCB. Time frame: July-December 2003.

Previous State bond issues have provided funds for the planning, design, and construction of water recycling projects and for research. Under the current rules, planning grants are provided up to $75,000 per study with a 50 percent local match requirement. For design and construction funding, both grants and loans are available. Grants are provided for 25 percent of capital cost up to a maximum of $5 million per project. The remainder of capital costs can be funded with State loans at a subsidized interest rate of one half of the interest rate of State bonds. The combined grant and loan for a project provide an equivalent subsidy of about 40 to 45 percent

of capital costs. Federal funding can be used by a project to the extent that the combined State and federal funding does not exceed 45 percent, thus ensuring a significant local investment. It is recommended to continue this State funding framework with additional funds.

Recommendation 1.1.2.

The California Water Commission, in cooperation with DWR and SWRCB, is strongly encouraged to seek federal cost sharing legislation to support the development of water recycling projects in California to achieve the 1.5 million acre-feet goal by the year 2030.

Approach and Implementation:

The U.S. Congress should be requested to continue to support federal funding and activities for water recycling. The federal government has provided significant capital funding for water recycling projects in California under the Reclamation Wastewater and Groundwater Study and Facilities Act (Title XVI of Public Law 102-575). The U.S. Bureau of Reclamation has also conducted the Southern California Comprehensive Water Reclamation and Reuse Study and assisted in the San Francisco Bay Area Regional Water Recycling Program master plan, regional studies identifying opportunities for water recycling in Southern and Northern California and evaluating potential projects to expand water reuse.

2. Public Dialogue / Public Outreach

While the direct participants in water recycling are the water and wastewater agencies that plan, design, construct and operate recycled water facilities and the users of the recycled water, the impacts of water recycling projects extend to the public at large. The public bears part or all of the financial burden, experiences possible exposure to recycled water, and may experience aesthetic or other impacts of projects. Public concerns over cost and public health have been the most prominent, but underlying issues of environmental justice or growth and land development have been evident.

Participants at the January 2003 Task Force meeting debating issues posted on the wall. Exemplifying the consensus-building process essential for successful advancement of water recycling, a diversity of viewpoints were represented on the Task Force.

Public support for water recycling has generally been very strong and many projects have been implemented without the apparent need for significant public participation. However, perhaps due to a more astute public awareness of public works projects or more concern over public health issues, several water recycling projects in recent years have experienced enough public opposition to halt their implementation. Controversy has focused mainly on indirect potable reuse projects, where the end product of the recycled water becomes part of drinking water sources, either groundwater basins or surface water reservoirs. One major conclusion of the Task Force is that the decision to undertake indirect potable reuse needs to be a local decision based on community values, complete and accurate information, and an assessment of the water supply options. While these factors are desirable for all projects, they are critical for indirect potable reuse. At this point there is not sufficient public consensus that any State mandate for indirect potable reuse would be appropriate.

Community *- Public at large including, but not limited to, local ethnic groups, political/social/economic groups, environmental justice advocates and environmentalists.*

The Task Force analyzed project experiences, listened to experts in public involvement, and reviewed some key literature. The following general public participation principles emerged.

1. The public needs to be involved in all phases of project planning with opportunities for involvement in developing and selecting alternatives, not just to be informed of final decisions.
2. Members of the public need to be listened to and responded to with respect. Their values and needs should be incorporated into the decision criteria. Their fears and concerns should be considered real and valid and mitigated with accurate information and, if necessary, changes in project design. Interaction should follow common courtesies of appropriate language, body gestures, and cordiality to keep focus on project issues.
3. Adequate and understandable information needs to be disseminated in many forums on proposed projects and water supply issues in general.
4. Recycled water projects need to be justified on fundamental needs or community desires, such as an adequate and safe water supply or prevention of water pollution.
5. Principles of environmental justice need to be incorporated. The public expects that costs and benefits of projects should be equitably shared.
6. The public needs a broad understanding of water supply issues to have a context in which to evaluate recycled water.

The Task Force has developed recommendations for a value-based decision-making model to improve public participation at the local level, especially during project development. It has identified areas where State and local leadership can be improved to increase general public support for water recycling and better policy decisions. It also recommends changes in the State's educational curricula and a State-sponsored media campaign to engender an underlying public understanding of water issues and water recycling and a climate of public support for water recycling.

2.1. COMMUNITY VALUE-BASED DECISION-MAKING MODEL FOR PROJECT PLANNING

Issue

Public participation and representation is founded on the idea that those who are affected by decisions or policies should participate or be represented in the policy making processes, because the public is capable of making wise and prudent decisions. The public should be involved throughout all project phases—the planning, deliberation, decision, design, and implementation. Such public involvement is not currently required by State law. Public access to information on proposed projects is commonly through the environmental review processes required by the California Environmental Quality Act (CEQA) and the federal National Environmental Policy Act (NEPA). Under these acts, the minimum public notification requirements are inadequate to engage the public. Furthermore, agencies typically attempt to involve the public when deciding on implementing a project. The public is often forced to decide on support or opposition to a project without background knowledge of local water issues and alternative water resources options.

Early public involvement can assist the project proponent in identifying and responding to the concerns of the public. Public participation creates empowerment and empowerment yields a sense of collaboration. With the need to supply additional water in the State and the potential use of recycled water projects to meet that need, water utilities and the decision-makers should make an investment in the public arena, so that their decisions will pay off in the long run for their customers and their communities.

Determining what a community values, then making decisions based on that information is the foundation of a community value-based decision-making model. This model encourages participants to recognize that most people believe in a unified set of fundamental values, then takes them further, into the realization that these values can be the basis for consistent and improved decision making. A values-based decision-making model should embody the general public participation principles listed in the introduction to this section. Recommendations 2.1.1 through 2.1.6 are components of an effective community value-based decision-making model.

Recommendation 2.1.1.

Public participation should be increased through vigorous outreach, augmenting the notification requirements stipulated by CEQA and NEPA.

Approach and Implementation:

NEPA and CEQA both establish requirements for public notification and opportunity to comment on environmental impact documents. However, these procedures are not adequate to fully engage the public. Neither law requires public participation in project formulation and alternatives development. There is no requirement for a public hearing under CEQA and a requirement for only one hearing under NEPA. While the perception is that these environmental laws are vehicles for public participation, they are mainly oriented toward full analysis and public disclosure of environmental impacts. These laws have become wedges to force project proponents to hear public concerns, but they were not designed as effective public participation tools. Considering the time and cost of developing recycled water projects, from project formulation through construction and implementation, there should be more opportunities for the public to participate. Early public involvement develops community support, while providing an opportunity to identify and address public concerns. This in turn assists the agency to design a project that meets the needs of the community. Therefore a more concerted public outreach process is considered necessary. Effective public participation can be encouraged and implemented at the State and local levels.

1. State Level

a. To the extent that State funding agencies have existing statutory authority, they should require public information and outreach during project planning for recycled water projects in order to receive State loans and grants. In

order to determine the existing statutory authority with respect to State loans and grants for water projects, the funding agencies, DWR and SWRCB, should conduct a legal review. This review should commence on 1 July 2003 with results obtained no later then 1 November 2003.

b. If additional statutory authority is needed, then in future bond laws the Legislature should specify a funding criterion that project planning include a public participation program. However, if the legal review reveals that no additional statutory authority is needed, the funding agencies should include public information and outreach requirements during project planning for recycled water projects to receive State loans and grants. Where statutory authority is adequate, the agencies should proceed with the recommendation at the conclusion of the legal review, or no later then 1 July 2004 and ongoing thereafter.

c. State guidelines should be developed for effective public participation actions that project proponents can take. An appropriate State entity to develop these guidelines would be the California Bay-Delta Public Advisory Committee (BDPAC) or its successor, which is administered by the California Bay-Delta Authority. The BDPAC should utilize its subcommittees, such as the Environmental Justice Subcommittee. The BDPAC should provide advice and guidance to assess current requirements and determine procedures to incorporate community value-based decision-making into State funded loans and grants. The improvements should incorporate the general public participation principles listed in the introduction to this section and the components of the other parts of this recommendation and Recommendations 2.1.2 through 2.1.6. Time frame: January 2004 to January 2005.

2. Local Level

In addition to regulatory changes, project sponsors should act on their own in good faith with the community, and implement an effective value-based decision-making model incorporating the general public participation principles listed above and the components described in Recommendations 2.1.2 through 2.1.6. Local agencies should carry out this recommendation beginning July 2003 and ongoing thereafter.

Recommendation 2.1.2.

Project planners should hold more public meetings to gather and supply information at appropriate venues.

Approach and Implementation:

A key element of value-based decision-making is identification of common values and interests of a group, a community, or communities within a community (such as neighborhoods, ethnic groups, political groups). Public meetings can be effective and efficient tools in reaching all interested and affected parties, to have meaningful dialogue with community members and to determine community interests and concerns. To make contact with the community members, public notices and other outreach materials should be available in the languages spoken locally; these should be placed in familiar community venues

(e.g. civic organizations, libraries) and distributed at local stores in the project area. Community leaders should identify appropriate venues, and meetings should be held at times and locations that are convenient for the communities affected by the project. These meetings should provide information and resources (scientists, technical assistance) to the public so they understand the issues involved with a project. This recommendation should be carried out by local agencies beginning July 2003 and ongoing thereafter.

Stakeholders *- Individuals and organizations who are involved in or may be affected by water recycling activities.*

Recommendation 2.1.3.

Project developers should make project decisions that respect and incorporate the community's values and concerns (considering public health, growth, coordination with local planning, environmental justice issues, et cetera):

a. Develop the project considering the values and ameliorating the concerns gathered at public forums,

b. Recruit potential recycled water users and community representatives for a stakeholder group to assist in the review of the project, alternatives considered, and selection,

c. Meet with policy makers in the early stages and on a regular basis to obtain support to ameliorate challenges that could affect the project.

Approach and Implementation:

After gathering the issues and concerns of a community through public meetings and other feedback systems like questionnaires, project planners should develop project alternatives that address the needs of the community. Specifically, project objectives should include those issues and concerns of the public. The project alternatives, which may include a water recycling option, are to be determined which might address those concerns. By developing and presenting a range of options designed to meet those interests, the public can select a project alternative or suggest changes that address those values.

The development of a stakeholder process that includes representation from as many groups and interests as possible is highly advisable. A stakeholder process should allow individuals, groups, and organizations whose interests are affected by the proposed project to effectively present their views within the process and to work with other community interests to develop a consensus on the direction an agency should take. Stakeholders should be provided access to technical analysis (science, economics, and environmental and social impacts) that enables informed participation. Although an alternative recommended through a stakeholder process may not be the most economical or desirable from an engineering standpoint, it may be the alternative most likely to achieve public support and successful implementation. Most importantly, a stakeholder process will help build trust between local agencies and the communities that they serve, which is essential to the success of potentially controversial projects.

The political scene is dynamic and changeable. Vocal opposition groups can inhibit political support for recycled water projects. In order for politicians to support a project they

need to know the facts about a project, as well as be assured that the project has voter approval. Meeting with policy makers on a regular basis can help to inform politicians of the status of the project. Including representatives of communities and stakeholders who are not agency officials and support a project in meetings with politicians helps political leaders to understand the breadth of public support and to place any opposition in perspective. To be effective, the group should have sufficiently broad and diverse memberships who understand and support the project selected. This recommendation should be carried out by local agencies beginning July 2003 and ongoing thereafter.

Recommendation 2.1.4.

Project planners should convene an independent advisory committee composed of experts in the field and consumers from a variety of viewpoints, who have no vested interest, to review the proposed project alternatives, including implementation and operation issues, where needed.

Approach and Implementation:

For those projects likely to cause controversy, an independent advisory committee, selected in consultation with the public, should be convened to review a proposed project and its alternatives in the context of other water resource planning decisions. To engender credibility, the advisory committee should be composed of experts in the field from a variety of viewpoints who are "above the fray" without a vested interest. Even with public meetings and stakeholder groups, there may still be individuals who did not have the ability to participate in the process. For those individuals, an independent advisory committee can provide quality assurance. This recommendation would be carried out by local agencies beginning July 2003 and ongoing thereafter.

Recommendation 2.1.5.

Water recycling should be presented to the public with other alternatives for locally achieving water supply goals.

a. Evaluate all water resource alternatives using consistent criteria before proceeding with a water recycling project as part of an integrated water resources approach.

b. Evaluate water resource project alternatives based on assessment of all health, costs, environmental, social and relative risk factors, and degree of multiple benefits.

c. Provide on-going updates with all the current information, work progress, and decisions to the community to facilitate an educated choice.

Approach and Implementation:

In order for a community to participate fully, the public needs to know the alternatives available to meet their objectives. After consensus is reached on the issues and objectives for a project, local agencies can provide the public with information on technologies (such as water treatment options) and practices (such as conservation). This information can be used

for development of a complete palette of possible alternatives for achieving water quality and supply objectives. This procedure is part of integrated water resources planning - a comprehensive, interdisciplinary approach to water resource planning that encompasses water resource assessment, demand considerations, analysis of alternatives, risk management, resource diversity, environmental considerations, least-cost analysis, multidimensional modeling, and participatory decision-making and public input, among other factors.

Chlorination contact basin at Delta Diablo Sanitation District Recycled Water Facility in Antioch, CA, ensures a recycled water that is essentially free of pathogens.

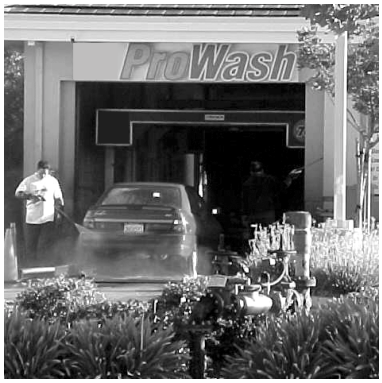
Water conservation, water transfers, seawater desalination, and local storage may be other options to be evaluated. Water recycling itself may present several options in terms of geographic area to be served, certain types of uses and associated levels of recycled water treatment. Construction of dual distribution systems for delivery of recycled water for nonpotable uses may be an option when indirect potable reuse is being considered. Local agencies should supply sufficient information on all alternatives to the public, including the extent of infrastructure, relative risks, costs, energy needs, and potential environmental impacts so that meaningful fact-based dialogue can occur. Local agencies should study alternatives in sufficient detail to determine positive and negative aspects of each. During discussions of potential health concerns or unknowns associated with indirect potable reuse, health concerns and unknowns associated with other sources of supply must be included with the reminder that most natural sources of water are not necessarily free of contaminants. Specific examples of where various potential technologies have been implemented elsewhere should be provided including data on how well they perform. Providing tours of water supply and treatment facilities can be very effective at this point, and will provide participants with a first hand view of these processes in action.

Local agencies should update the community with the current status of the project to facilitate an educated choice. Fact-based dialogue with the public may generate agreement as to the best alternative for the community. However, this choice may not match the agency's preferred alternative, which is often based on engineering and economic considerations alone. For example, in the case of newer communities, a dual piping option - where recycled water distribution pipelines can be installed during development - may prove to be the best option for utilizing recycled water. On the other hand, older and established cities with streets already jammed with other substructures would have a much more difficult task in implementing a dual piping option. By providing the public with accurate information on all possible alternatives, informed decision-making can take place to select solutions that will be supported by the public. This recommendation should be carried out by local agencies beginning July 2003 and ongoing thereafter.

Recommendation 2.1.6.

Local agencies should cultivate and utilize media opportunities for their projects:

a. Inform media personnel (editors, reporters, anchors, etc) about recycled water and the project through media kits, fact sheets, websites, etc,



Marin Municipal Water District provides recycled water for car washes in Marin County, CA.

b. Prepare question and answer/fact sheets and press releases to address every issue raised,

c. Submit articles and opinion pieces to local media for publication,

d. Provide timely responses and corrections to any misinformation,

e. Continually disseminate accurate and complete information on water issues to the public utilizing:

   (i) utility bill inserts,

   (ii) regular public workshops,

   (iii) community meetings,

   (iv) Internet.

Approach and Implementation:

The media plays an important role in the broadcasting of information to the public. The media can help inform the public about potential projects and opportunities for public input and participation. In order for the media to accurately and fully inform the public, project planners need to provide the media with accurate information.

Information regarding recycled water should provide the necessary background for understanding all water projects, not sell or persuade the media and thus the public to use recycled water. The information provided should include appropriate questions to ask of all water projects to level the playing field for evaluation of all water sources: groundwater, surface water, desalination, and reclamation, et cetera. This information should describe the advantages and disadvantages of each source in terms of planning, reliability, environmental impacts, and safety. Risk exists in every single source of water, even mountain spring water composed of glacial melt, and thus should be recognized and described. The benefits of recycled water should be communicated in terms of broader community desires, such as less environmental impacts than alternatives or improved supply reliability during droughts.

There is a need for on-going education to build a long-term public understanding of water issues and water recycling in particular. This can be done through direct agency communication to consumers, such as through bill inserts or Web sites, or through the media by channeling information and articles to newspapers, television stations, and other media.

2.2. LEADERSHIP SUPPORT FOR WATER RECYCLING.

Issue

State support for water recycling is not well known, even though the Legislature has been clear in its support for water recycling. The State Legislature enacted the Water Reuse Law of 1974 (Water Code sections 460-465) with the stated mission that "the primary interest of the people of the State in the conservation of all available water resources requires the maximum reuse of reclaimed water in the satisfaction of requirements for beneficial uses of water." Furthermore, State law declares that use of recycled water by communities will contrib-

ute to the peace, health, safety, and welfare of the people of the State (Water Code section 13511). Despite this legislation, some health and regulatory agencies at the local level lack a common mission when it comes to recycled water. Some local health offices are not familiar with recycled water applications, guidelines, rules and regulations. Variations in procedures and requirements cause confusion, uncertainty, and unnecessarily raise the unit cost of production and distribution of recycled water. Additionally, innovative uses for recycled water such as toilet flushing in office buildings or landscape irrigation for private homes may be dealt with differently by local health departments. The approval process necessary for such programs can be complex and can differ from county to county.

State leadership is needed to communicate its mission of encouraging recycled water use as stated in the Water Code throughout all government levels, to facilitate projects, and to communicate the rules clearly to local health offices and regional quality control boards. Additionally, mandated State agencies should take the lead in ensuring that local offices are consistent in their application of State policy.

Recycled water lacks unified definitions for discussing the various treatment levels available. Additionally, signs announcing the presence of recycled water have sent the public mixed messages about the water quality. Therefore, a statewide system of codification that refers to the various treatment levels and uses for recycled water would help to develop a common language that is more easily understood during public discussions of proposed projects. This new language can be appropriately applied to the signs to avoid mixed messages.

In addition to State responsibilities, local governments should be providing guidance on recycled water by adopting strong local ordinances that are adequately implemented and enforced. Many local jurisdictions have approved ordinances that require dual plumbing where recycled water is available. However, local regulatory agencies (building inspectors, code enforcement officers) are not requiring dual plumbing in many new developments. Many planning and/or public works departments do not have the staff or resources available to audit effective implementation of these ordinances.

Finally, public agencies should take a leadership role to encourage recycled water use by using, where feasible, recycled water in public agency buildings to flush toilets, and/or to irrigate landscapes and city parks.

West Basin Municipal Water District delivers recycled water to Chevron Oil Refinery in El Segundo, CA., for use in cooling towers.

STATE SUPPORT

Recommendation 2.2.1.

The State should take a leadership role on water recycling:

a. Develop an easily understood common language for describing various recycled water treatment levels and uses to improve public discussions of proposed projects,

b. Set a standard signage for regulatory use that increases the public's understanding of recycled water,

Value-Based Decision-Making *- Determining what a community values, then making decisions based on that information is the foundation of a community value-based decision-making model.*

Some general public participation principles include the following:

1. *The public needs to be involved in all phases of project planning with opportunities for involvement in developing and selecting alternatives.*
2. *Members of the public need to be listened to and responded to with respect. Their values and needs should be incorporated into the decision criteria.*
3. *Adequate and understandable information needs to be disseminated in many forums on proposed projects and water supply issues in general.*
4. *Recycled water projects need to be justified on fundamental needs or community desires, such as an adequate and safe water supply or prevention of water pollution.*
5. *Principles of environmental justice need to be incorporated with the costs and benefits of projects shared equitably.*
6. *The public needs a broad understanding of water supply issues to have a context in which to evaluate recycled water.*

c. Develop a consistent position on water recycling,

d. Convey the State's mission to increase recycled water use throughout all government levels via interagency collaboration,

e. Facilitate recycled water projects and communicate the rules clearly to local health offices and regional water quality control boards,

f. Encourage recycled water use by setting an example and using recycled water in public agency buildings wherever practical.

Approach and Implementation:

Recommendations 2.2.1. a and b are intended to clear up apparent confusion and misunderstanding about recycled water. For meaningful dialogue to take place, recycled water discussion needs unified definitions for the various treatment levels available. For instance, most nonpotable recycled water use discussions speak of tertiary-treated (Title 22) water. However, when the discussion switches to indirect potable reuse projects, it is still referred to as "recycled water" even though such projects may have treatment far beyond filtration, including microfiltration, reverse osmosis, ultraviolet disinfection, or ozonation. Hence, the term "recycled water" should be supplemented with additional terminology that connotes the level of treatment and the allowable human exposure.

Prevalent signage also sends mixed messages about recycled water quality. For years the public has read signs that have given the message that recycled water is dangerous (skull and cross bones). Now, the public is told it is safe for certain uses. More appropriate signage is proposed in Recommendation 3.3.1.

To implement recommendations 2.2.1. a and b the DHS should convene a six-month panel including members from industry and the public to create a set of short-hand terms for different types of recycled water. The goal is to develop a common language that is easily understood by both industry and the public. The panel should also address a standard signage for regulatory use that aids the public's understanding of recycled water. DHS should commence this panel by January 2004 with a completion date of June 2004.

As presented in recommendations 2.2.1. c-f, government, water industry officials as well as other stakeholders and interested groups need to have a shared understanding of recycled water so that they can take a leadership role and provide guidance. In 1994 a similar coalition of local, State and federal agencies and the WateReuse Association of California adopted the "Statement of Support for Water Reclamation." A coalition, including DWR, SWRCB, DHS, water agencies and organizations, such as the Water Education Foundation, American Water Works Association, California Urban Water Agencies, California Urban Water Conservation Council, WateReuse Association, and the Association of California Water Agencies should be formed to review the previous Statement of Support and revise it as necessary. This coalition could also:

- explore methods of interagency collaboration throughout all government levels to

communicate the issues, regulations, and procedures on recycled water and methods to appropriately maximize its use,

- author a guidebook to communicate the rules on recycled water clearly to local governmental agencies, health offices, regional water quality control boards, et cetera, thereby facilitating projects by removing unnecessary impediments, and
- publish a list on existing and new recycled water informational programs to be distributed throughout the industry and the community.

DWR should lead the implementation of this recommendation beginning September 2003 and the results should be presented to the agencies on or before January 2005.

In addition to the coalition, each State agency should convey its mission with regard to appropriately maximizing recycled water by providing informational materials and education to the local agencies on the legislated recycled water regulations. State agencies should also take the lead in ensuring that local offices are consistent in their application of State policy. This recommendation should be carried out by State agencies beginning July 2003 and ongoing thereafter.

Recommendation 2.2.1. f displays how governmental agencies can lead by example. To encourage recycled water use, public agencies should take a leadership role by using recycled water in public agency buildings to flush toilets, to irrigate landscapes, and/or to irrigate city parks. This recommendation is to place the appropriate infrastructure into new buildings to utilize recycled water where feasible. Governmental facilities that can be served by recycled water should be retrofitted to irrigate with recycled water and dual plumbed to use recycled water for toilet flushing and cooling towers. This recommendation should be carried out by State and local governmental agencies beginning July 2003 and ongoing thereafter.

Recommendation 2.2.2.

State funding should be provided for public education and outreach.

Approach and Implementation:

Public informational programs and outreach are not free. Communities will need financial resources to inform their public on water issues in general, and recycled water in particular. Therefore, all new bonds for recycled water projects should include public information and outreach as eligible expenditures. This recommendation should be carried out by State and local governmental agencies beginning July 2003 and ongoing thereafter.

Recommendation 2.2.3.

The State should work closely with local agencies on water recycling to:

a. Provide technical assistance on current and cost effective technology, greater education and clarification on recycled water use policy through informational materials and education supplied to the local agencies on the legislated recycled water regulations; and

b. Coordinate and publicize existing and new recycled water informational programs developed by various agencies for use throughout the industry.

Approach and Implementation:

State agencies, such as DWR, SWRCB, and DHS, should assist local agencies with information and education on current and cost effective technology for recycled water projects, as well as guidance on legislated recycled water regulations. The State should make informational materials available and provide educational presentations for recycled water. State agencies should compile a list for publication on existing and new recycled water informational programs to be distributed throughout the industry and the community. The agencies should make use of the material published by the government and water industry officials coalition proposed in recommendations 2.2.1. c-f.

DWR, SWRCB, and DHS should carry out this recommendation beginning July 2005 and ongoing thereafter.

LOCAL GOVERNMENT SUPPORT

Recommendation 2.2.4.

Appropriate local agencies should adopt well-defined local recycled water ordinances.

Approach and Implementation:

Local recycled water ordinances can facilitate the use of recycled water by specifying the conditions under which it is available or its use may be mandatory, the procedures for obtaining it and the requirements for the proper use of it to protect public health and prevent nuisance. To accomplish this recommendation, local governments need to consider their communities' needs for water and how recycled water fits into their overall plan. Since regions are unique, local governments need to appraise their water assets and all existing and potential water supply options. This is generally accomplished through their Urban Water Management Plan, water facilities master plan, the general plan or other planning documents. Local governments should carry out this recommendation beginning July 2003 and ongoing thereafter. The appropriate agency to adopt a recycled water ordinance is usually the local water retailer, which has jurisdiction over water supply and can govern the sources of water available to customers.

REGULATORY AGENCIES SUPPORT

Recommendation 2.2.5.

Local planning, building code enforcement, health and public works departments should effectively enforce local recycled water ordinances, through adequate staff and resources. Building inspectors and code enforcement officers should effectively enforce the installa-

tion of types of plumbing that would allow the use of recycled water in accordance with local recycled water ordinances.

The Inland Empire Utilities Agency's Carbon Canyon Water Recycling Plant provides water (10 mgd) primarily for landscape use in Chino and Chino Hills, CA.

Approach and Implementation:

While retail water suppliers can adopt ordinances requiring the use of recycled water under certain circumstances, they do not have jurisdiction over most plan reviews for subdivision or building construction. Local governments that have such jurisdiction need to enforce plumbing practices that will allow recycled water ordinances to be implemented. Local governments, in particular health departments, should obtain adequate educated staff to apprise local enforcement officers of the status and regulations regarding recycled water. Local governments should carry out this recommendation beginning July 2003 and ongoing thereafter.

Recommendation 2.2.6.

Convene a statewide independent review panel on indirect potable reuse to summarize the existing and on-going scientific research and address public health and safety as well as other concerns, such as environmental justice, economic issues and increased public awareness.

Approach and Implementation:

Recycled water projects in which the eventual end use will be a source of drinking water are termed indirect potable reuse projects. These projects utilize recycled water for groundwater recharge or for reservoir augmentation. The public has genuine and legitimate concerns regarding the safety of using recycled water for human consumption.

While many scientists studying recycled water believe the multiple safety factors used in its production are adequate to safeguard public health, they nevertheless recommend proceeding with indirect potable reuse with caution and carefully considering its need within the context of the local or regional water supply needs and options. The public has not always been assured. Because of the source of recycled water and the potential for ingestion, indirect potable reuse projects need to proceed in an environment of a fully informed and consenting public. The public should be provided with information about any known risks associated with groundwater recharge or reservoir augmentation, and information on possible contaminants and their detection. The measures taken to avoid, lessen or eliminate the various risks should be provided to the interested public. The public also wants to know the monitoring procedures as well as what emergency action plans are in effect in the case of any detected contaminant. An understanding of the risks associated with other possible sources of supply, such as rivers that receive discharges from wastewater treatment plants or contamination from other influences, can provide a realistic picture of recycled water quality.

Over the past ten years, several agencies have been unsuccessful in attempting to implement recycled water projects that featured indirect potable reuse for groundwater recharge or for reservoir augmentation. Because these projects encountered public opposition, it is obvious that agencies also need guidance on how to approach the public on the issues surrounding recycled water.

Some factors associated with indirect potable reuse in California need further investigation and clarification. With respect to scientific factors, previous panels have advised the State on the areas of health risk and the needs for further research, which is on-going. However, there has been a problem with articulating the science and the previous expert findings and assuring the public that public health protection has been a paramount concern of State health officials in drafting regulations and approving projects. In order to provide better communication of this information to the public, a panel on indirect potable reuse should be convened to review the science, as well as other factors associated with indirect potable reuse, such as public perception, economics and environmental justice, and advise the State and local agencies on how to proceed with indirect potable reuse. One approach would be to use the California Bay-Delta Science Program, which is administered by the California Bay-Delta Authority (Authority). The Authority is responsible for CALFED Bay-Delta Program to develop and implement a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta System. As part of this function, the Authority evaluates water supply options that could relieve stress on the Bay-Delta System, including water recycling.

The California Bay-Delta Science Program (Program) is developing the best available scientific information, using world-class science and peer review, to guide decisions and evaluate actions that are critical to its success. This Program has three goals. The first goal is to establish a body of knowledge that is unbiased, relevant, authoritative and integrated, while communicating that knowledge to the scientific community, agency managers, stakeholders and the public. The second goal is to establish protocols and incorporate independent peer review into all Program activities. The third goal is to develop science-based performance measures for each CALFED program.

For more comprehensive guidelines on indirect potable reuse, the California Bay-Delta Science Program should appoint a panel to review existing scientific information and on-going research, assess the potential health risks of indirect potable reuse within the context of other health risks and summarize this information in language easily accessible to the public. The panel could make the public aware of potential unknown factors related to public health and articulate the on-going research to identify new potential risks and the regulatory controls in place to minimize the potential impacts should the presence of harmful chemicals be discovered in the future. The panel could review the experience of previous proposed and implemented projects and obtain a better understanding of public perception and concerns, such as social equity in the exposure of risks. The panel could advise the State and local agencies proposing indirect potable reuse on how to incorporate appropriate public information and participation in the planning process to ensure full awareness, equity, and consent. This recommendation should be carried out beginning January 2004 and its report completed and published by July 2005.